CLAIMS

What is claimed is:

1. A method for determining power characteristics of a family of cable modems, the method comprising:

determining first internal gain levels associated with a first cable modem in a family of cable modems across a plurality of frequencies and a plurality of transmission power levels;

determining second internal gain levels associated with a second cable modem in the first family of cable modems across the plurality of frequencies and the plurality of downstream transmission power levels;

storing integrated internal gain levels in the first cable modem, the integrated internal gain levels derived using first and second internal gain levels, wherein the integrated internal gain levels represent a first subset of the first and second internal gain levels.

2. The method of claim 1, wherein first internal gain levels are used for adjusting internal power levels between a tuner and a demodulator associated with the first cable modem.

3. The method of claim 2, wherein the downstream transmission power levels are power levels between the tuner and an external node.

4. The method of claim 3, wherein the first internal gain levels are a combination of IFAGC and RFAGC values.

5. The method of claim 3, wherein the first subset of the first and second internal gain levels comprises first and second internal gain levels across a second subset of the plurality of frequencies.

6. The method of claim 5, wherein the second subset is five frequencies between 93MHz and 855 MHz.

7. The method of claim 5, wherein the integrated internal gain levels between the subset of the plurality of frequencies can be determined substantially by using linear interpolation.

8. The method of claim 5, wherein the first subset of the first and second internal gain levels comprises first and second internal gain levels across a third subset of the plurality of power levels.

9. The method of claim 8, further comprising determining third internal gain levels associated with a third cable modem across a plurality of frequencies and a plurality of transmission power levels.

10. The method of claim 8, wherein the integrated internal gain levels are derived by averaging the first and second internal gain levels.

11. The method of claim 10, wherein the integrated internal gain levels are stored in volatile memory associated with the cable modem.

12. A method for calibrating a cable modem associated with a cable modem family, the method comprising:

determining a first measured internal gain level associated with a cable modem communicating with an external node at a first downstream frequency and a first transmission power level;

determining a second measured internal gain level associated with the cable modem communicating with the external node at a second downstream frequency and a second transmission power level;

calibrating the cable modem by comparing the first and second measured internal gain levels with stored internal gain level information associated with the cable modem family to determine a gain level offset.

13. The method of claim 12, wherein the first and second power levels are both 0dB.

14. The method of claim 13, wherein stored internal gain level information comprises internal gain levels associated with the cable modem family.

15. A computer readable medium comprising computer code for calibrating a cable modem associated with a cable modem family, the computer readable medium comprising:

computer code for determining a first measured internal gain level associated with a cable modem communicating with an external node at a first downstream frequency and a first transmission power level;

computer code for determining a second measured internal gain level associated with the cable modem communicating with the external node at a second downstream frequency and a second transmission power level;

computer code for calibrating the cable modem by comparing the first and second measured internal gain levels with stored internal gain level information associated with the cable modem family to determine a gain level offset.

16. The computer readable medium of claim 15, wherein the first and second power levels are both 0dB.

17. The computer readable medium of claim 16, wherein stored internal gain level information comprises internal gain levels associated with the cable modem family.

18. A method for providing a transmission power level to an external node coupled to a cable modem, the method comprising:

determining a measured internal gain level associated with communications between a cable modem tuner and the cable modem demodulator;

using a predetermined gain level offset to determine an adjusted internal gain level;

identifying the downstream frequency associated with communications between the cable modem and the external node;

using interpolation to find a transmission power level associated with the downstream frequency and the adjusted internal gain level.

19. The method of claim 18, wherein using interpolation comprises using linear interpolation between stored downstream transmission frequencies in an internal gain table.

20. The method of claim 19, wherein using interpolation comprises using linear interpolation between stored transmission power levels.

21. The method of claim 18, wherein the gain level offset is programmed into nonvolatile memory.

22. The method of claim 21, wherein identifying the downstream transmission frequency comprises reading the downstream transmission frequency from a MAC device associated with the tuner.

23. The method of claim 22, wherein using the gain level offset to determine the adjusted internal gain level comprises combining the measured internal gain level with the gain level offset.

24. The method of claim 22, wherein using the gain level offset to determine the adjusted internal gain level comprises combining the measured internal

gain level offset with the stored internal gain level values associated with the cable modem family.

25. The method of claim 24, wherein the stored internal gain level values are predetermined AGC values stored in a table in memory across a plurality of frequencies and a plurality of transmission power levels.

26. The method of claim 25, wherein the plurality of frequencies lie between 93 MHz and 855 MHz.

27. The method of claim 26, wherein the plurality of transmission power levels lie between –20dB and +20dB.

28. A cable modem coupled to an external node, the cable modem comprising:

means for determining a measured internal gain level associated with communications between a cable modem tuner and the cable modem demodulator;

means for using a predetermined gain level offset to determine an adjusted internal gain level;

means for identifying the downstream frequency associated with communications between the cable modem and the external node;

means for using interpolation to find a transmission power level associated with the downstream frequency and the adjusted internal gain level.

29. The cable modem of claim 28, wherein using interpolation comprises using linear interpolation between stored downstream transmission frequencies in an internal gain table.

30. The cable modem of claim 29, wherein using interpolation comprises using linear interpolation between stored transmission power levels.

31. The cable modem of claim 28, wherein the gain level offset is programmed into nonvolatile memory.

32. The cable modem of claim 31, wherein identifying the downstream transmission frequency comprises reading the downstream transmission frequency from a MAC device associated with the tuner.

33. The cable modem of claim 32, wherein using the gain level offset to determine the adjusted internal gain level comprises combining the measured internal gain level with the gain level offset.

34. The cable modem of claim 32, wherein using the gain level offset to determine the adjusted internal gain level comprises combining the measured internal gain level offset with the stored internal gain level values associated with the cable modem family.

35. The cable modem of claim 34, wherein the stored internal gain level values are predetermined AGC values stored in a table in memory across a plurality of frequencies and a plurality of transmission power levels.

36. The cable modem of claim 35, wherein the plurality of frequencies lie between 93 MHz and 855 MHz.

37. The cable modem of claim 36, wherein the plurality of transmission power levels lie between –20dB and +20dB.